

AD-A080 164

RAND CORP SANTA MONICA CA
CONTRACT-HIRE PERSONNEL IN THE DEPARTMENT OF DEFENSE, (U)
APR 77 R V COOPER

F/8 5/9

UNCLASSIFIED

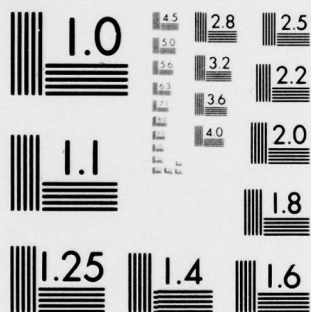
RAND/P-5864

NL

1 OF 1
AD
A080164



END
DATE
FILMED
3 - 80
DDC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

II

②
B.S.

⑥

CONTRACT-HIRE PERSONNEL IN THE DEPARTMENT OF DEFENSE

⑩

Richard V.L. Cooper

⑪

Apr 10 1977

⑫ 20

DDC FILE COPY

DDC
RECEIVED
FEB 4 1980
A

⑭

KAND/P-5864

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

296600 80 1 28 052

The Rand Paper Series

Papers are issued by The Rand Corporation as a service to its professional staff. Their purpose is to facilitate the exchange of ideas among those who share the author's research interests; Papers are not reports prepared in fulfillment of Rand's contracts or grants. Views expressed in a Paper are the author's own, and are not necessarily shared by Rand or its research sponsors.

The Rand Corporation
Santa Monica, California 90406

CONTRACT-HIRE PERSONNEL IN THE DEPARTMENT OF DEFENSE

by

Richard V.L. Cooper

The Rand Corporation
1700 Main Street
Santa Monica, California 90406

I. INTRODUCTION

Contract-hire personnel are an important element of overall DoD manpower resources.[1] Although there are numerous anecdotes regarding the usefulness of contract-hires in both peacetime and wartime situations, there are presently no available estimates regarding the numbers of contract-hire personnel or their costs.

The purpose of this paper is ~~therefore~~ to establish a general methodology, using presently available data from the Budget of the U.S. Government, for estimating the numbers of contract-hire personnel and their costs. As will become clear in the discussion below, the methodology is relatively crude, but does provide some insight into the historical trends in the use and costs of contract-hires.

[1] "Contract-hires" refers to those personnel who work for civilian firms that are under contract to the DoD to provide specific services such as maintenance, kitchen duties, management expertise, etc. Thus, although they do not work directly for the DoD, they do provide important services that, in the absence of contract-hires, would have to be rendered by directly hired employees (military or civilian).

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	<input type="checkbox"/>
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or special

A

II. SOURCES OF THE ESTIMATES

The methodology developed here is based on the assumption that contract-hire personnel costs are incorporated into the "Other Services" object classification of the military services (including the reserve components) Operations and Maintenance budget accounts.[1],[2] As shown in Table 1, complete data on this object classification according to Service and reserve component are not available prior to FY74. However, the amount of exclusions are relatively small, so that column (14) of Table 1 provides estimates of the "Other Services" object classification of the Operations and Maintenance account for DoD as a whole.

The basic problem in using the "Other Services" object classification in the Operations and Maintenance budget account is that this object classification includes a variety of different specific obligations such as obligations for indirect-hire personnel, the Industrial Funds, contract services, and "other". For example, Table 2 shows that about \$700 million was obligated for indirect-hire personnel in FY76 out of the "Other Services" object classification.[3],[4] Similarly, Table 2 also shows that obligations

[1] As such, this approach excludes contractors engaged in research, development, etc.

[2] Based on "direct obligations" only -- i.e., excluding "reimbursable obligations."

[3] "Indirect-hire" personnel are those foreign nationals working in overseas U.S. installations, who are actually employed by the host country, but whose costs are reimbursed by the DoD.

[4] At the same time, not all indirect-hire costs are included in the "Other Services" object classification of the O&M budget, as discussed later.

Table 1

**"Other Services" Object Classification in the
Operations and Maintenance Budget
(\$ millions)**

FY	Defense Agencies														Sub- Total ^b	Estimated Total ^c
	Army	Navy	USMC	USAF	(5)	USAR	USNR	USMCR	USAFR	ARNG	ANG	Sub- Total ^a	(12)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)			
60 ^a	629	766	11	911	-	-	-	-	7	55	2379	-	2592			
64 ^b	631	1110	15	771	167	-	-	-	24	12	-	2694	2754			
68 ^b	1855	2254	28	1155	222	-	-	-	11	68	-	5593	5717			
70 ^b	1980	2403	59	2038	281	-	-	-	12	79	-	6852	7004			
72 ^b	2003	2564	63	2183	328	-	-	-	16	100	-	7257	7418			
74	2387	3670	104	2417	417	37	100	5	38	121	-	-	9357			
76	2245	4594	117	2384	1178	41	133	4	78	64	122	-	10960			
78	2998	6102	190	3067	1310	59	145	5	99	79	159	12595	14213			

^aCol (12) equals sum of cols (1), (2), (3), (4), (10), (11).

^bCol (13) equals sum of cols (1), (2), (3), (4), (5), (10), (11).

^cFY60: Col (14) = $k_1 \times \text{col (12)}$, where $k_1 = \text{col (14)} \div \text{col (12)}$ for FY78.

FY64-72: col (14) = $k_2 \times \text{col (13)}$, where $k_2 = \text{col (14)} \div \text{col (13)}$ for FY78.

FY74-78: col (14) = sum of col (1) - (11).

SOURCE: Budget of the U.S. Government, various years.

Table 2

Components of the "Other Services" Object Classification
(\$ million)

	<u>FY76</u>	<u>FY78</u>
Indirect Hires	\$ 738	\$ 827
Industrial Funds	5254	5874
Other (Contracts, etc.)	<u>4968</u>	<u>7512</u>
Total	10960	14213

SOURCE: *Budget of the U.S. Government, 1978.*

amounting to some \$5.25 billion out of this object classification were for the so-called Industrial Funds in FY76.[1]

Thus, out of a nearly \$11 billion obligation for "Other Services" in the O&M budget in FY76, nearly \$6 billion was for indirect-hires and purchases from the Industrial Funds.

The problem of determining how much of the "Other Services" account is attributable to the cost of contractor supplied services to the DoD is further complicated by the fact that some Industrial Funds purchases are purchases of contract services. The next section therefore describes a very approximate methodology for estimating the numbers of contract-hire personnel and their cost, based on the "Other Services" object classification in the O&M budget.

[1] "Industrial Funds" are defined in the FY78 Budget of the U.S. Government as follows: "Department of Defense Industrial Funds finance activities performing industrial or commercial type functions on a reimbursable basis. These programs are supported by orders received at the activities from a variety of service accounts whose funds provide the working capital for their completion. Industrial fund activities are then reimbursed by customers through progress payments for the full production costs."

III. METHOD OF ESTIMATION

From the above discussion, the "Other Services" object classification in the Operations & Maintenance budget accounts provides the basic source material for estimating the amount of costs for services provided by civilian contractors to the DoD. There are, however, two problems associated with the use of this object classification for estimating the amount of costs for contractor-supplied services. The first is that the "Other Services" object classification of the O&M budget includes some of the costs for indirect-hire civilian personnel (as shown earlier in Table 2). Second, this object classification also includes some expenditures related to the Services' purchases from the Industrial Funds. Therefore, to obtain an estimate of the amount of contract services purchased by the DoD from the "Other Services" object classification in the O&M budget, we need to provide for a way of purging this account of the noncontract portion related to these two elements.

Because the FY78 budget (which includes data for FY76, FY77, and FY78) was the first to provide a breakdown of the "Other Services" object classification in the O&M budget, it is not possible to measure how much of indirect-hire costs are included in this object classification for earlier years. For fiscal 1976 and 1978, though, Table 3 shows that about 70 percent of the total costs expended on indirect-hire personnel are included in the "Other Services" object classification of the O&M budget. For example, of the total \$1.1 billion spent for indirect-hires in FY76, about \$700 million was recorded in the "Other Services" object classification of the O&M

Table 3

Indirect-Hire Civilians in the
"Other Services" Object Classification
(\$ millions)

FY	Indirect-Hires(IH)		"Other Services"	
	Total ^a	In "Other Services" ^b	Total ^c	Non-IH
	(1)	(2)	(3)	(4)
60	289	202	2592	2390
64	330	231	2754	2523
68	334	234	5717	5483
70	350	245	7004	6759
72	533	373	7418	7045
74	700	490	9357	8867
76	1100	738	10960	10222
78	1300	827	14213	13386

^aSOURCE: OASD(Comptroller)

^bNumbers in roman type, from Table 2. Numbers in italics estimated as 75 percent of column (1).

^cFrom column (14), Table 1.

^dColumn (4) equals column (3) less column (2).

budget--that is, the remaining \$400 million expended on indirect-hire civilian personnel was recorded elsewhere in the DoD budget.

Because similar breakdowns are not available prior to FY76, the amount of expenditures for indirect-hire civilian personnel included in the "Other Services" object classification in the O&M budget must be estimated. Accordingly, these expenditures were assumed to be equal to 70 percent of the total indirect-hire personnel costs--about the same proportion as actually evidenced during FY76 and FY78 (as shown in column (2) of Table 3). This procedure therefore enables us to purge the "Other Services" object classification of the O&M budget from indirect-hire personnel costs, the results of which are shown in column (4) of Table 3.

The second problem centers on the inclusion of some purchases from the Industrial Funds in the "Other Services" object classification of the O&M budget. The questions then become, first, how much of the "Other Services" appropriation consists of purchases from the Industrial Fund and, second, how much of these purchases should be purged in order to create an estimate of total contract costs.[1]

To begin with, column (1) of Table 4 shows the total DoD-wide Industrial Fund purchases since 1960. As can be seen, these purchases represent a significant share of the DoD budget--about \$12 billion (almost 12 percent of the DoD budget) will be appropriated for Industrial Fund purchases in Fiscal 1978. By comparing column (1) for

[1] That is, not all purchases from the Industrial Funds should be purged, since some of these are for the purchase of contractor-supplied services to the DoD.

Table 4

Industrial Funds
(\$ millions)

Year	Industrial Funds ^a (1)	Materials & Supplies ^a (2)	Net ^b (3)	Recorded in "Other Services" Account ^c (4)
1960	\$2566	\$ 429	\$2137	\$1282
1964	3319	645	2674	1604
1968	6289	1007	5282	3169
1970	9071	1791	7280	4368
1972	8869	1546	7323	4394
1974	9198	1640	7558	4535
1976	10567	2085	8482	5254
1978	12104	2378	9726	5874

^aSOURCE: *Budget of the U.S. Government, various years.*

^bColumn (3) equals column (1) less column (2).

^cNumbers in roman type: from Table 2. Numbers in
italics: estimated as 60 percent of column (3).

FY76 and FY78 with the amount of purchases from the Industrial Fund included in the "Other Services" object classification in the O&M budget shown earlier in Table 2, (and shown here in column (4)), it is clear that not all purchases from the Industrial Fund are included in this object classification. The problem therefore becomes one of projecting how much of purchases from the Industrial Fund are included in this particular object classification (again since there are no breakdowns of the "Other Services" object classification prior to FY76).

To obtain such estimates, we first assume that none of the Industrial Fund purchases for materials and supplies are included in the "Other Services" object classification of the O&M budget. Column (3) of Table 4 thus shows the DoD-wide purchases from the industrial funds less those purchases related to the cost of materials and supplies. Noting that the Industrial Fund purchases included in the "Other Services" object classification of the O&M budget for FY76 and FY78 (the only years for which data were available) amount to about 60 percent of the total non-materials and supplies purchases from the Industrial Fund for the DoD, we therefore construct an estimate of the amount of purchases from the Industrial Funds included in the "Other Services" object classification of the O&M budget as being 60 percent of column (3) in Table 4 for years prior to fiscal 1976. The results of this are shown in column (4).

The above data thus provide us with a basis for estimating the amount of costs expended for contractor-supplied services to the DoD. Specifically, an upper bound of the cost of contractor-supplied services to the DoD which are included in the "Other Services" classification of the O&M budget is given as the total appropriation for this object

Table 5

Contract Costs: Total
(\$millions)

	Maximum Estimate ^a	Minimum Estimate ^b	Average ^c
Year	(1)	(2)	(3)
1960	\$ 2390	\$1108	\$ 1749
1964	2523	919	1721
1968	5483	2314	3898
1970	6759	2391	4425
1972	7045	2651	4848
1974	8867	4332	6600
1976	10222	4968	7595
1978	13386	7512	10449

^aColumn (1) equals column (4) from Table 3.

^bColumn (2) equals column (1) here less column (4) from Table 4.

^cColumn (3) equals a simple average of columns (1) and (2).

classification less the amount of indirect-hire costs which are included in this object classification (i.e., column (4) from Table 3). This is shown in column (1) of Table 5. Implicit in this "maximum" estimate is that all purchases from the Industrial Funds that are included in the "Other Services" object classification are in fact for the purchase of contractor-supplied services[1]

A reasonable "minimum" estimate of the cost of contract services would seem to be this maximum estimate less the amount of purchases from the Industrial Funds included in this object classification (i.e., column (1) from Table 5 less column (4) from Table 4). This is shown as column (2) in Table 5. In other words, implicit in this "minimum" estimate is that none of the Industrial Funds purchases recorded in the "Other Services" object classification of the O&M budget are for the purchases of contract services.

The basic problem therefore boils down to one of determining how much of the purchases from the Industrial Fund represent the costs of contractor-supplied services to the DoD, since as noted earlier, the Industrial Funds represent a variety of different activities--many (but not all) of which are costs of contract services. That is, neither the "maximum" or "minimum" estimates seem entirely appropriate.

Lacking any better information on what proportion of the purchases from the Industrial Funds represent costs for

[1] That is, this assumption means that other types of purchases from the Industrial Funds would be recorded elsewhere in the budget.

contractor-supplied services, we therefore "estimate" the total cost of contractor-supplied services to the DoD (as recorded in the "other services" object classification of the O&M budget) as simply the average of these "maximum" (column (1) in Table 5) and "minimum" (column (2) in Table 5) estimates. The results of this procedure are given in column (3) of Table 5. In other words, the estimates shown in column (3) are based on the assumption that half the Industrial Fund purchases recorded in the "Other Services" object classification of the O&M budget are purchases of contract services.

Thus, using data from the Budget of the U.S. Government, we are able to provide very rough estimates of the amount of contractor-supplied services to the DoD.

IV. CONTRACT-HIRE PERSONNEL AND COSTS

We can use the estimates of the total cost for contractor-supplied services to the DoD shown in Table 5 to construct estimates of the costs of the contract-hire personnel engaged in these particular service activities. Specifically, assuming that contract personnel make up about 80 percent of total contractor-supplied costs[1]--that is, about 20 percent of these costs are assumed to be for nonlabor inputs to the contractor-supplied services--we can therefore estimate the total costs for contract-hire personnel as equalling 80 percent of the total contract costs shown in Table 5. Using the same approach and nomenclature as shown in Table 5, we can therefore obtain maximum, minimum, and "best guess" estimates of the cost of contract-hire personnel as simply 80 percent of the total contract costs shown in Table 5. These are given in columns (1), (2), and (3), respectively, of Table 6.

To estimate the number of contract-hire personnel corresponding to these costs, we assume that contractors pay their personnel a total compensation (i.e., pay and fringe benefits) equal to the national average, as shown in column (4) of Table 6. Assuming that contractors on average earn a 10 percent profit on the cost of labor used in fulfillment of contractor-supplied services, we can therefore estimate

-----[1] For the U.S. economy as a whole, the amount paid to labor amounts to about 70 percent of the total amount paid to all factors of production. Service industries, however, tend to be more labor intensive. Because contractor-supplied services are likely to be of a "service-industry" type, it does not seem unreasonable to assume that labor costs make up about 80 percent of total contract costs for services provided to the DoD by contractors.

Table 6

Estimates of Contract-Hire Personnel and Costs

Year	Contract-Hire Costs (\$ mil.) ^a			Avg. Comp/Year ^b (\$ thous.)	Contract-Hires (000s) ^c		
	Max. (1)	Min. (2)	Avg. (3)		Max. (5)	Min. (6)	Avg. (7)
1960	\$ 1912	\$ 886	\$1399	\$ 4.79	363	168	266
1964	2018	735	1377	5.71	321	117	219
1968	4386	1851	3118	7.04	566	239	402
1970	5407	1913	3540	7.89	623	220	408
1972	5636	2121	3878	8.94	573	216	394
1974	7094	3466	5280	10.42	619	302	461
1976	8178	3974	6076	12.15	611	297	455
1978	10709	6010	8359	14.17	687	385	536

^aColumns (1), (2), and (3) equal columns (1), (2), and (3) from Table 5, respectively, times 0.8.

^bIncludes pay and fringe benefits. SOURCE: Bureau of Labor Statistics.

^cColumns (5), (6), and (7) equal columns (1), (2), and (3), respectively, divided by column (4) times 1.1.

the total number of contract-hire personnel used by the DoD (related to contractor-supplied services funded out of the "Other Services" object classification of the O&M budget) as the total amount of contract-hire costs divided by the product of average compensation times 1.1. Maximum, minimum, and "best guess" estimates of the numbers of contract-hire personnel therefore follow directly from the corresponding estimate of the costs of contract-hire personnel, the results of which are shown in columns (5) through (7) of Table 6.[1]

[1] That is, for example, column (5) equals column (1) divided by the product of column (4) times 1.1

IV. CONCLUSIONS

From the preceding discussion, we know that estimates of contract-hire personnel numbers and costs are obviously very imprecise. Yet, data from the Budget of the U.S. Government can be used to construct very rough estimates and time trends in the numbers of such personnel and their costs. Moreover, the conclusions that can be drawn from these data do square reasonably well with the general impressions held by a number of defense officials and policymakers, as gained through informal conversations with these individuals.

Perhaps the most dominant trend to emerge from the data shown in Table 6 is the thrust toward greater use of contract-hire personnel in the DoD since the Vietnam War. That is, the Vietnam War appears to have spurred a significant increase in the numbers of contract-hire personnel used by the DoD in fulfilling many DoD mission objectives. Upon finding that contractors could provide valuable services to the DoD, the military services apparently have continued to utilize contract hires at approximately the same levels as they did during the height of the Vietnam War, and actually seem to have increased the number of such personnel since the War. Thus, we find that the numbers of contract-hire personnel used in the post-Vietnam environment appear to be about 1 1/2 to 2 times larger than they were during the pre-Vietnam environment. In other words, there seems to have been a significant shift towards greater utilization of contract-hire personnel by the DoD--and it is in this particular observation that these results seem to

reflect the impressions held by a number of defense officials and analysts.

To conclude, obtaining exact estimates of the numbers of contract-hire personnel or their costs is difficult, if not impossible. But available data can be used to generate estimates that seem to be generally sensible and should provide a basis for evaluating future trends in the utilization of contractor-supplied services to the DoD.

reflect the impressions held by a number of defense officials and analysts.

To conclude, obtaining exact estimates of the numbers of contract-hire personnel or their costs is difficult, if not impossible. But available data can be used to generate estimates that seem to be generally sensible and should provide a basis for evaluating future trends in the utilization of contractor-supplied services to the DoD.